California Department of Pesticide Regulation
Environmental Hazards Assessment Program
830 K Street
Sacramento, CA 95814

STANDARD OPERATING PROCEDURE

Well Sampling: Obtaining Permission to Sample, Purging, Collection, Preservation, Storage, and Documentation

---

KEY WORDS

Permission to sample, Purging, Collection, Preservation, Storage, Documentation

APPROVALS

APPROVED BY: _____ DATE: 12/30/98
Management

APPROVED BY: _____ DATE: 12/29/98
EHAP Senior Scientist

APPROVED BY: _____ DATE: 12/29/98
EHAP Quality Assurance Officer

PREPARED BY: Joe Marade DATE: 12/22/98
J. Marade

STANDARD OPERATING PROCEDURE
Well Sampling: Obtaining Permission to Sample, Purging, Collection, Preservation, Storage, and Documentation

---

1.0 INTRODUCTION

1.1 Purpose

To provide instruction for obtaining permission to sample a well, assessing its suitability for sampling, and the purging and collecting of a water sample from a well.

1.2 Definitions

1.2.1 **Purging** eliminates standing water from a well and allows the system to be recharged with water from the aquifer.

2.0 Materials

2.1 DPR Permission form to sample well
2.2 Plastic bag (18 inch by 24 inch) for ground cover
2.3 Plastic bag (6 inch by 12 inch) to cover electrical points
2.4 Core stem remover
2.5 Schrader® sampling tube
2.6 Locking pliers
2.7 Sample container (Refer to SOP QAQC005.00)
2.8 De-ionized water
2.9 Styrofoam holders for one-liter sample bottles or appropriate packing for other size containers
2.10 One-half pint mason jar
2.11 Portable pH meter
2.12 Preservative, if necessary (Refer to Study Specific Decision Section)
2.13 Replacement Schrader® valves
2.14 Replacement valve core stems
2.15 Teflon® tape
2.16 Ice chests
2.17 Thermometer for ice chests
2.18 Ice materials (Refer to Study Specific Decision Section)

2.19 Chain of custody form
2.20 DWR form 429
2.21 Well information sheet
2.22 Polaroid camera
2.23 Polaroid film

3.0 PROCEDURES

3.1 Obtain Permission To Sample Well

3.1.1 Introduce yourself, explain project, determine who is well owner, and ask well owner to sign permission form to sample their well (Appendix I).

3.1.2 Obtain mailing information and if possible, any information regarding the last name of the original well owner and the year the well was drilled, well depth (drilled and standing water), depth to the first perforations in the well casing, previous well sample results, and the proximity of any other wells (if any) on the property.

3.2 Examine Well and Determine If Suitable For Sampling

3.2.1 Determine sample port. Sample ports include Schrader® valves, faucets, or petcocks. Every effort should be made to sample water prior to having it enter the storage tank. The airspace and increased temperatures inside a storage tank could accelerate dissipation or degradation of many pesticides.

3.2.2. Review well condition (look at casing, cap, pad), surrounding well location (soil type, cracks in soil, slope of land, depressions), presence and use of pesticides, type of well, pump type, and sample port, or anything unusual.

3.2.3 Accept or reject well based on well condition and location of sample port (See SOP FSWA006).

3.3 Purging Procedure

3.3.1 Examine system and determine system layout.

3.3.2 Open enough faucets to allow the well pump to run a minimum of 10 minutes.

3.3.3 During the purging process, open enough hose bibs around the house to ensure that the pressure gauge on the storage tank holds at a steady level below the pump's shutoff pressure such that the pump output rate is equal to the system's drain rate.

3.4 Sampling Procedure

3.4.1 Schrader® valve sample ports refer to Procedure 3.5. Faucet and petcock sample ports refer to Procedure 3.6.

3.5 Preparing Schrader® Valve Sample Ports For Sample Collection

3.5.1 After running the pump for the desired time, turn faucets off and turn off power at the circuit box or switch box.

3.5.2 Cover the electrical point box with a plastic bag and secure with duct tape to avoid getting water in the points and short circuiting the system.

3.5.3 Remove the core stem from the Schrader® valve using a core stem remover.

3.5.4 Attach a Schrader® sampling tube. (This is a Tygon® connector/Teflon® tube attachment that is slipped over the Schrader® valve and secured to the valve with a pair of locking pliers.)

3.5.5 Resume power to pump and open some faucets as described in 3.3.3.

3.5.6 Let water flow through sampling tube for 20 seconds to flush out tube.

3.6 Sample Collection

3.6.1 While purging the well, a field blank sample is collected at the well site to check for potential contamination.

3.6.1.1 Put on a pair of gloves to prevent contaminating samples.

3.6.1.2 Bring the de-ionized (DI) water container and a plastic bag to be used as a ground cover to the sample site.

3.6.1.3 Place the DI water container on the plastic bag and remove the lid from the field blank container.

3.6.1.4 Rinse the field blank sample container if it does not contain a preservative. Keep the field blank container lid in one hand, support the DI container, and pour DI water into the field blank container held in the styrofoam pack.

3.6.1.5 Fill the field blank container to the top with DI water and replace cap. (Add preservative first if required then add DI water. Avoid overfilling.)

3.6.2 It is time to collect your samples after the pump has run for a total of 10 minutes (completing the purge procedure).

3.6.2.1 Rinse out sample containers (only the containers that are not pre-packaged with a preservative) with well water before attempting to collect the well sample.

3.6.2.2 Either insert the Schrader® sampling tube or gently run water from a faucet into each bottle and fill the appropriate number of

bottles with well water to the designated volume as defined by the lab liaison for analysis and/or storage requirements.

3.6.2.3 If no sample preservation is required, rinse a one-half pint jar with the well water and then fill the jar with well water for a pH measurement. Determine pH. (SOP EQWA002.00) Record data on the Chain of Custody.

3.6.2.4 Turn off faucets and power to pump if using a Schrader® valve sample port (See Section 3.7).

3.6.2.5 Replace gloves.

3.7 Replacing Schrader Valve Stem After Sample Collection

3.7.1 After completing sample collection, turn faucets off and turn power to the circuit box or switch box to the off position.

3.7.2 Detach the Schrader® sampling tube.

3.7.3 Reinsert the core stem into the Schrader® valve using a core stem remover.

3.7.4 Resume power to pump.

3.7.5 Open faucets to reduce the pressure in the storage tank until the pump turns on, then close the faucet(s) and allow the pump to run through one complete cycle to check that it is turning on and off properly and that there are no leaks from the Schrader® valve core.

3.7.6 Remove the plastic bag covering the point box.

3.8 Package Samples (Refer to SOPQAQC005.00)

3.9 Documentation

3.9.1 Prepare a chain of custody record (Appendix 2) to accompany each water sample and field blank as described in SOPADMN006.00.

3.9.2 Prepare a Well Water Summary Sheet (DWR Form 429) to request a California Well Number (Appendix 3). Note the owner, owner address, tenant, tenant address, county, township, range, section, well use, and pump type, and prepare a map showing the well location with respect to the nearest intersection. Plot the well location on a U.S. Geological Survey 7 1/2 minute topographical quadrangle map and attach it DWR Form 429.

3.9.3 Prepare a well information sheet to document the assessment information discussed in Procedure 3.2.2. Include micro and macro sketches of well location and construction. Note land use surrounding the well. Take close-up and vicinity photographs and attach to the well information sheet. Note the well owner's last name, study number, township/range-section, date sampled, and the sampling crew's initials on each photograph. Also, circle the sampling port and any important details and/or features regarding the well's condition or it's proximity to surrounding features.

4.0 STUDY SPECIFIC DECISIONS

4.0.1 Number of wells to sample: This depends on the analyte that is under evaluation and the type of study that is being performed. Refer to the appropriate well monitoring study protocol (four section, adjacent section, or ground water protection list) to determine the number of wells that are required for the study.

4.0.2 Number of samples to collect: This depends on the analyte that is under evaluation and the type of study that is being performed. Refer to the appropriate well monitoring study protocol (four section, adjacent section, or

ground water protection list) to determine the number of samples that are required to be collected for each analyte per well in the study. A minimum of three replicate samples (one primary and two back-up samples) and a field blank sample should be collected for each set of analyses per well site.

4.0.3 Sample containers: Options include but are not limited to one-liter amber glass bottles, volatile organic analysis (VOA) vials, or one-liter polypropylene bottles. This choice depends on the analyte that is under evaluation. The Quality Assurance Officer will determine the appropriate container to be used after considering certain factors such as the type of analysis that is required and the volume of water that is required for analysis and the breakdown behavior of the compound versus factors such as light, temperature, and time. In addition, the Quality Assurance Officer needs to consider if the analyte will bind to the surface of any of the sample containers.

4.0.4 Sample Preservation

4.0.4.1 Acidification: Options are yes or no. The Q.A. officer will determine if acidification is required after considering the stability of the compound before it arrives to the laboratory for analysis. If hydrochloric acid is required, followed SOP FSWA007 for sample preservation.

4.0.4.2 Ice materials: Options include but are not limited to bags of crushed ice, dry ice, or blue ice. This choice depends upon the sample container that was selected, the volume of water in the container, and the temperature that the sample needs to be stored at during transportation to the laboratory and the method of transportation (ground or air freight).

5.0 REFERENCES

APPENDIX 1: Department of Pesticide Regulation Permission Form For Request to Sample on a Property

APPENDIX 2: Department of Pesticide Regulation Chain of Custody Form Record

APPENDIX 3: Department of Water Resources Well Data Form 429

APPENDIX 4: Department of Pesticide Regulation Well Information Form

California Environmental Protection Agency
James M. Strock, *Secretary for Environmental Protection*

State of California
Pete Wilson, *Governor*

DEPARTMENT OF PESTICIDE REGULATION
James W. Wells, *Director*

1020 N Street, Room 161
Sacramento, California 95814

Date _____
County _____

The California Department of Pesticide Regulation requests permission to enter your property and obtain **Well Water Samples.** You are not liable for any personal injury or damage to our equipment which occurs on your property.

The samples from your well will be analyzed for the following pesticide(s): atrazine, simazine, diuron, prometon, bromacil _____. They may also be analyzed for other pesticides used in California. You will be notified of the results in approximately eight weeks.

Should questions or problems arise, please call the Environmental Hazards Assessment Program at (916) 324-4100 (please call collect) and ask for the **Well Information Contact.**

_____
Environmental Hazards Assessment Program

Signature Granting Permission

X_____ Owner ( ), Manager ( ), or _____ ( )

----------Well Information----------

Study # _____ Location Code _____

State Well Number (T/R-S/TR/Seq. No.) _____

Sampling Address _____

_____ ZIP _____

Owner _____ Tenant _____

Mailing Address_____ Mailing Address _____

_____ ZIP _____ _____ ZIP _____

Phone No. ( ) _____-_____ Phone No. ( ) _____-_____

Contact Person _____ Contact Person _____

Is this the original well owner? Yes ( ) No _____

Owner information: depth _____, year _____ , other _____

Positive for other chemicals? No ( ) Yes _____

Are there other wells on the property? No ( ) Yes _____

Printed on Recycled Paper

CALIFORNIA
DEPARTMENT OF
PESTICIDE REGULATION

CHAIN OF CUSTODY RECORD
(use ball point pen only)

SPECIAL "Z" STUDY

ENVIRON. MONITOR. & PEST MGMT.
ENVIRON. HAZARDS ASSESSMENT
1020 N STREET, ROOM 161
SACRAMENTO, CA 95814-5624

30-014 (Rev. 1/97)

Study #	Sample #	[1] County	[2] Well Number Twn	Rng	Sec	[3] Sequence Number Tract	[4] Meridian	[5] D/Z Code	[8] Date Sampled Mo	Day	Yr	Time	[13] Lab Code	[22] Well Use
Z						-								

Person Collecting

Partner

Minutes Pumped

pH/adjusted pH

Location Code

Well Owner's Name

[18] Address #

Street

City

REMARKS:

Primary 1 =

Primary 2 =

Backup =

Backup =

Field Blank 1 =

Field Blank 2 =

Chemical Acronyms:

DEA: 2-amino-4-chloro-6-isopropylamino-s-triazine

ACET: 2-amino-4-chloro-6-ethylamino-s-triazine

LAB RESULTS: [10] [9] [11] [12] (Save Extracts)

ST	CHEMICAL		AMOUNT p.p.b.	DETECTION LIMIT
☐	ATRAZINE	(0045)		
☐	SIMAZINE	(0531)		
☐	DIURON	(0231)		
☐	PROMETON	(0499)		
☐	BROMACIL	(0083)		
☐	PROMETRYN	(0502)		
☐	HEXAZINONE	(1871)		
☐	CYANAZINE	(1640)		
☐	METRIBUZIN	(1692)		
☐	DEA	(4051)		
☐	ACET	(4096)		
☐		( )		

Extracted by: Extraction Date:

[15]

Analyzed by: Analysis Date:

Approved by: Report Date:

Well Depth [20]	Top Perf.	Bottom Perf.	P/N [19]	Reserved	Analytical Method [14]
				—	

Task	Relinquished by	Received by	Date/Time
Container Preparation			
Collect/Transport			

Lab Name	Received for lab by	Date/Time	Logged in by	Date/Time	Lab #

Distribution: White to CDPR lab liaison, Yellow retained by lab, Pink to field files.

STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

State No. _____

WELL DATA

BRANCH _____

Owner _____ | State No. _____
Address _____ | Other No. _____
Tenant _____
Address _____

Type of Well: Hydrograph ☐ Key ☐ Index ☐ Semiannual ☐

Location: County _____ Basin _____ No. _____

U.S.G.S. Quad. _____ Quad. No. _____

_____ ¼ _____ ¼ Section _____, Twp. _____, Rge. _____ MD SB H Base & Meridian

Description _____

Reference Point description _____

which is _____ ft. above / below land surface. Ground Elevation _____ ft.

Reference Point Elev. _____ ft. Determined from _____

Well: Use _____ Condition _____ Depth _____ ft.

Casing, size _____ in., perforations _____

Measurements By: DWR ☐ USGS ☐ USBR ☐ County ☐ Irr. Dist. ☐ Water Dist. ☐ Cons. Dist. ☐

Chief Aquifer: Name _____ Depth to Top Aq. _____ Depth to Bot. Aq. _____

Type of Material _____ Perm. Rating _____ Thickness _____

Gravel Packed? Yes ☐ No ☐ Depth to Top Gr. _____ Depth to Bot. Gr. _____

Supp. Aquifer _____ Depth to Top Aq. _____ Depth to Bot. Aq. _____

Driller _____

Date drilled _____ Log, filed _____ open (1) _____ confidential (2) _____

Equipment: Pump, type _____ make _____

Serial No. _____ Size of discharge pipe _____ in.

Power, Kind _____ Make _____

H. P. _____ Motor Serial No. _____

Elec. Meter No. _____ Transformer No. _____

Yield _____ G.P.M. Pumping level _____ ft.

Water Analysis: Min. (1) _____ San. (2) _____ H.M. (3) _____

Water Levels available: Yes (1) _____ No _____

Period of Record: Begin _____ End _____

Collecting Agency: _____

Prod. Rec. (1) _____ Pump Test (2) _____ Yield (3) _____

SKETCH

REMARKS

Recorded by: _____

Date _____

DWR 429

CA STATE DEPT. OF
PESTICIDE REGULATION

WELL INFORMATION

30-035 (Rev. 9/93)

STUDY NUMBER _____ WELL OWNER _____

WELL # _____

LOCATION CODE _____ SAMPLING ADDRESS _____

CHEMICAL(S) Atrazine, Bromacil, Diuron, Prometon, Simazine

WELL CONDITION	YES
CASING	
PVC	☐
STEEL	☐
OTHER	☐
CRACKS	☐
RUST	☐
HOLES	☐
DIAMETER	_____
CAP	☐
CRACKS	☐
RUST	☐
HOLES	☐
OTHER	☐
CEMENT PAD	☐
CRACKS	☐
AREA FT^2	_____
HEIGHT	_____
WELL LOCATION	
CRACKS IN SOIL	☐
DEPRESSED	☐
BERMED	☐
SLOPE	_____
SOIL TYPE	_____
HERBICIDE USE?	☐
SHED	☐
WOOD	☐
ALUMINUM	☐
GARAGE	☐
OTHER	☐
CONDITION	
EXCELLENT	☐
GOOD	☐
POOR	☐
AREA FT^2	_____
PESTICIDE USE IN SHED?	☐

SHED (CONT.)	YES
PESTICIDE STORAGE	☐
LIST	_____
	_____
	_____
	_____
PUMP TYPE	
SUBMERSIBLE	☐
TURBINE	☐
JET	☐
SAMPLE PORT	
TANK	☐
PUMP	☐
FAUCET	☐
SCHRADER	☐
STAND PIPE	☐
PRESSURE RELEASE VALVE	☐
OTHER	☐
OTHER WELLS ON PROPERTY	
DOMESTIC	☐
IRRIGATION	☐
ABANDONED	☐
TEMP. SHUT DOWN	☐
MONITORING	☐
OTHER	☐

IN REFERENCE TO SAMPLE WELL _____ FT.

DATE _____

TIME _____

SAMPLE NUMBERS _____

pH _____

WELL TYPE: Domestic Irrigation Large Water System

COMMENTS _____

SKETCH (INCLUDE WELL HEAD, SAMPLE PORT, TANK, SLOPE, WELL CONDITION, ANYTHING UNUSUAL SUCH AS CRACKS, HOLES, ETC.)

ATTACH POLAROIDS

SITE DESCRIPTION